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09/418,119	10/14/1999	ANGSHUMAN SAHA	239604	8445

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EXAMINER

NGUYEN, DUNG X

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 11/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/418,119

Applicant(s)

SAHA ET AL.

Examiner

Dung X Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17 - 24, and 26 - 36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31 - 36 is/are allowed.
- 6) ☒ Claim(s) 17 - 24, 26 - 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Response to Arguments

1. Applicant's arguments filed on 28 August 2003 have been fully considered but are not persuasive. The problem is in claim 17, the limitation as recited on lines 3 – 4 is in conflict with the statement as disclosed in lines 5 - 6 of claim 17. If the first device is already synchronized (as stated on lines 3 – 4 of claim 17), how can the first device becoming synchronized (as stated on line 6 of claim 17)?

2. Claims 1 – 16, 25, and 37 – 41 have been cancelled. The Notice of Abandonment mailed on October 3, 2003 is withdrawn.

Specification

3. The amendment filed on 28 August 2003 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added new matter, which is not supported by the original disclosure is as follows: In claim 17, line 4, “the first device has synchronization” is not supported by the specification.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

4. **Claims 28, 29, and 30 are objected** to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 28, 29, and 30 are the same as claims 24, 26, and 27, respectively.

Claim Rejections - 35 USC § 112

5. The followings are quotations of the first paragraph and the second paragraph of 35 U.S.C. 112:

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(1) The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

(2) The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claims 17 – 22 are rejected** under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 17, the statement of “first device has synchronization” is not described and supported in the specification. On page 3, line 11 of the specification, states “initially, the first device is unsynchronized”. And also, on page 5, lines 4 – 5, “a preferred embodiment of the present invention provides a method of achieving word synchronization between two asynchronous devices connected by multiple serial links” shows the first device is unsynchronized.

7. **Claims 17 – 22 are rejected under** 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding 17, the limitation stated on lines 3 – 4 is in conflict with the limitation stated on lines 5 - 6 of claim 17. If the first device is already synchronized (as stated on lines 3 – 4 of claim 17), how can the first device becoming synchronized (as stated on line 6 of claim 17)?

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Regarding claims 19 and 20, line 2, the statement of “device” is not cleared, i.e. is it related to first or second device?

Regarding claim 22, the recitation of the limitation "word units" in line 2. There is insufficient antecedent basis for this limitation in the claim. Is it “word devices” as stated on line 2 of claim 17?

Also, in claim 22, on lines 4 and 5, the statement of “device” is not cleared, i.e. is it related to first or second device?

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. **Claims 23, 26, 27, 29, and 30 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Galays et al. (US patent # 6,205,157 B1), further in view of Liu et al. (US patent # 6,154,468), and Froehling et al. (US patent # 6,560,298 B1).

Regarding claim 23, Galays et al. discloses (figure 9) a flow diagram describing the procedures in the case of loss of synchronization in the uplink (first device) or downlink (second device) (column 5, lines 52 – 64).

Galays et al. differs from the instant claimed invention that it does not show the second condition of becoming un-synchronized at the first device in response to receiving a threshold number of bad control words from the serial lines connected to the second device, wherein consecutive bad control words are un-separated by a synchronized data packet.

However, Liu et al. teaches the condition of becoming un-synchronized the synchronization pattern (column 1, lines 26 – 28 and column 2, lines 24 – 25) in the field of computer communications (column 1, lines 5 – 7) in receiving a threshold number (column 1, lines 57 – 59) of bad control (column 5, lines 19 – 21) words (column 8, lines 65 – 67) from the serial lines (abstract). In the computer communications field, one can recognize the computer of sending the information as the first device and the computer of receiving the information as the second device.

In addition, Froehling et al. shows the consecutive bad control words are un-separated by a synchronized packet (column 1, line 61 to column 2, line 48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Galays et al., Liu et al., and Froehling et al. to provide full requirements of the claimed invention without effort for using synchronization data to control transmissions (abstract of Galays et al.).

Regarding claims 26 and 27, respectively, Galays et al., Liu et al., and Froehling et al. differ from the claimed invention that they do not show that wherein the threshold number of bad control words is one (substantial in claim 26), or greater than one (substantial in claim 27). However, the threshold number of bad control words is on hand of one of ordinary skill in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to recognize Galays et al., Liu et al., and Froehling et al. to provide full limitation of the claimed invention.

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Regarding claims 29 and 30, respectively, the limitations are analyzed in the same manner set forth as claims 26 and 27.

10. **Claims 24 and 28 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Galays et al., Liu et al., Froehling et al., and further in view of Prentice et al. (US patent # 6,397,042 B1).

Regarding claim 24, Galays et al., Liu et al., and Froehling et al. differ from the claimed invention that they do not show the steps of: wherein

The first word device and the second word device each include a plurality of serializers and deserializers;

The serial lines connect the serializers of the first word device to the deserializers of the second word device and the serializers of the second word device to the deserializers of the first word device; and

The serializers and the deserializers of the first and second devices satisfy a SERDES specification for control characters.

However, Prentice et al. discloses (figure 1) that the serial lines connect the serializer of the first word device 10 to the deserializer of the second device 12 and the serializer of the second word device 12 to the deserializer of the first word device 10 (column 2, lines 26 – 53).

Prentice et al. differs from claim 24 that it does not show the first and second word devices each include a plurality of serializers and deserializers, and in addition, the serializers and the deserializers of the first and second devices satisfy a SERDES specification for control characters. However, Prentice et al. provides a single serializer and deserializer in each first word device 10 and second word device 12, so it can be able to provide a plurality of serializers and deserializers in the first word device 10 and the second word device 12, those also can satisfy a

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SERDES specification for control characters. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Prentice et al. to provide full requirements of the claim 24 without effort for improved loopback testing of an electronic communications device (abstract).

Finally, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Galays et al., Liu et al., Froehling et al., and Prentice et al. to provide full requirements of the claimed invention for using synchronization data to control transmissions (abstract of Galays et al.).

Regarding claim 28, the limitations are analyzed in the same manner set forth as claim 24.

Allowable Subject Matter

11. **Claims 31 – 36 are allowed.** The following is a statement of reasons for the indication of allowable subject matter:

Regarding to claim 31, the prior art of record fails to show or render obvious of a method for detail of detecting loss of synchronization at a first word device, the first word device being synchronized and connected to a second word device by a plurality of serial lines, comprising the steps of: becoming un-synchronized at the first device in response to serially receiving a threshold number of bad control words from the serial lines connected to the second device, except for the single condition that all bad control words received in the threshold are separated by a synchronized data packet.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Koehler et al. (US patent # 6,650,660 B1) discloses a method and its corresponding apparatus for synchronization of multiple data paths and recovery from lost synchronization.

Goldston et al. (US patent # 6,556,639 B1) discloses a method and its corresponding apparatus for determining transmission mode and synchronization for a digital audio broadcasting signal.

Suzuki et al. (US patent # 6,522,665 B1) discloses a data sequence generator, transmitter, information decoder, receiver, transmitter-receiver, data sequence generating method, information data decoding method, and recording medium.

Nishimura (US patent # 6,493,360 B1) discloses a reception synchronization circuit, receiver using the same, and digital communication system.

Zak (US patent # 6,452,991 B1) discloses a method and its corresponding apparatus for acquiring channel synchronization in TDMA communications systems using dual detection thresholds.

Laturell et al. (US patent # 6,404,780 B1) discloses a synchronizing data transfer protocol across high voltage interface.

Ribeiro Filho et al. (US patent # 6,038,274) discloses an apparatus for decoding a channel signal into an information signal and reproducing arrangement provided with the apparatus.

Contact Information

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (703) 305-4892. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:30 PM.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Ghayour Mohammad H. can be reached on (703) 306-3034. The fax number for this group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

DXN

October 23, 2003


MOHAMMAD H. GHAYOUR
PRIMARY EXAMINER